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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,642	01/12/2005	Wan-Jae Myeong	206,843	9347

7590

11/07/2006

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EXAMINER

VANOY, TIMOTHY C

ART UNIT

PAPER NUMBER

1754

DATE MAILED: 11/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/521,642

Applicant(s)

MYEONG ET AL.

Examiner

Timothy C. Vanoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>10/21/2005</u> . | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

The person having ordinary skill in the art has the capability of understanding the scientific and engineering principles applicable to the claimed invention. The references of record in this application reasonably reflect this level of skill.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

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under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over the article titled "Reactions of Nitrate Salts with Ammonia in Supercritical Water" by Dell'Orco et al. in view of U. S. Patent 5,480,630 to Arai et al.

The abstract of the Dell'Orco et al. article sets forth the reaction between nitrate salts (i. e. metal nitrate salts of the general formula MNO_3) with ammonia in supercritical water at a temperature ranging from 450 to 530 °C and at pressures near 300 bars.

The difference between the applicants' claims and the Dell'Orco article is that the applicants' claims set forth that the products of this reaction are fine metal oxides (whereas the Dell'Orco et al. article is silent with respect to the production of fine metal oxides).

U. S. Patent 5,480,630 describes a similar reaction that may be between metal nitrate salts and ammonia at temperatures ranging from 300 to 500 °C and at pressures that are not less than 160 kg/cm² (please see col. 2 lns. 11-51) so as to produce metal oxides having a size ranging from 100 to 2,000 nm. (please also see col. 3 lns. 30-38).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have further described the process taught in the Dell'Orco et al. article by identifying the reaction products as being fine metal oxide particles, as set forth in the applicants' claims, because the disclosures set forth in col. 2

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Ins. 11-51 and col. 3 Ins. 30-38 in U. S. Patent 5,480,630 fairly suggests that the reaction set forth in the Dell'Orco et al. article will produce the same fine metal oxides.

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over U. S. Patent 5,480,630.

U. S. Patent 5,480,630 describes the reaction between one of a plurality reactants to include the metal nitrates of the applicants' claims and one of a plurality of reagents to include the ammonia of the applicants' claims in supercritical water at a temperature ranging from 300 to 500 °C and a pressure that is not less than 160 kg/cm² (i. e. not less than 157 bars) so as to produce metal oxide particles having a size ranging from 100 to 2,000 nm. (please see col. 2 Ins. 12-51 and col. 3 Ins. 30-38).

The difference between the applicants' claims and U. S. Patent 5,480,630 is that the applicants' claims are specifically drawn to the use of metal nitrates (whereas U. S. Patent 5,480,630 is drawn to the use of one of a plurality of reactants to include the applicants' metal nitrates) and the applicants' claims are drawn to the use of ammonia (whereas U. S. Patent 5,480,630 is drawn to the use of one of a plurality of reagents to include the applicants' ammonia), however it is submitted that this difference would have been obvious to one of ordinary skill in the art at the time the invention was made because the courts have already determined that the selection of a particular species out of a prior art reference's list of species is *prima facie* obvious: please see the discussion of the *In re Petering* 301 F.2d 676, 681, 133 USPQ 275, 280 (CCPA 1962)

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court decision set forth in section 2144.08(II)(A)(4)(a) in the MPEP 8th Ed Rev. 3 Aug. 2005.

The following references from the applicants' International Search Report are made of record:

Japan Patent Document No. 9-52,772 A disclosing the formation of ceramics containing fine metal particles or fine metal oxide particles;

Japan Patent Document No. 1-219,166 A disclosing the formation of a metal oxide film;

Japan Patent Document No. 8-169,715 A disclosing a method for synthesizing fine compound oxide particles;

Japan Patent Document No. 2001-350,274 A disclosing a correcting liquid for a planographic printing plate, and

U. S. Patent 5,039,452 disclosing metal oxide varistors, precursor powder compositions and methods for preparing the same.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Timothy C. Vanoy whose telephone number is 571-272-8158. The examiner can normally be reached on Mon-Fri 8-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman, can be reached on 571-272-1358. The fax phone

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number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Timothy C Vanoy
Timothy C Vanoy
Primary Examiner
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tv